UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,011	07/24/2001	Gerald D. Zuraski JR.	5500-67400	4622

7590 07/25/2005	EXAMINER
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2183	

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2005*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 5-10, 13-18, and 21-23* is/are rejected.

7)☒ Claim(s) *3, 4, 11, 12, 19, and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1, 2, 5-10, 13-18, and 21-23 are rejected under 35 U.S.C. 102(b) as being clearly

anticipated by Yung, European Patent Application EP 0 798 632 A2 (herein referred to as Yung).

3.   Referring to claim 17, Yung has taught a computer system comprising:

a.   an interconnect (Figure 1, column 3, lines 25-54);

b.   a memory coupled to said interconnect (Figure 1, element 20);

c.   a second level cache configured to store branch prediction information (Figures 3

and 4, column 4, line 30-column 5, line 18);

d.   a processor including a first level cache (Figure 2, column 4, lines 12-29),

wherein said processor is configured to:

i.   detect said first level cache does not contain a first branch prediction

information corresponding to a first fetch address (column 1, lines 11-14),

ii.   determine whether said second level cache contains a second branch

prediction information corresponding to said first fetch address, said second

branch prediction information comprising a subset of said first branch prediction

information (column 1, lines 14-17, column 4, lines 33-33 and 41-52, Figure 3);

iii.   rebuild said first branch prediction information in response to determining

said second level cache contains said second branch prediction information

(column 4, line 41-column 5, line 6), wherein in order to rebuild said first branch

prediction information, said processor is configured to:

(1)   receive said second branch prediction information (Figure 3, The

L2 cache receives the second branch prediction information.);

(2)   receive a group of instructions corresponding to the fetch address

(column 3, lines 40-45);

(3)   utilize the second branch prediction information to identify one or

more predicted taken branches within the group of instructions (column 4,

lines 3-30);

(4)   generate third branch prediction information by decoding each of

the identified one or more predicted taken branches to determine a type of

each of the one or more predicted taken branches (column 4, line 3-

column 5, line 7);

(5)   combine said second branch prediction information with said third

branch prediction information (column 4, line 3-column 5, line 7);

(6)   store said combined second and third branch prediction

information as said first branch prediction in a first entry of said first level

cache, wherein said first entry corresponds to said first address (column 4,

line 3-column 5, line 7).

4.   Referring to claim 2, Yung has taught the method of claim 1, as described above, and

further comprising:

    a.   determining if said first entry of said first level cache is available (abstract, Figure

    3, column 2, lines 25-58),

    b.   evicting contents of said first entry in response to detecting said first entry is not

    available (abstract, Figure 3, column 2, lines 25-58); and

    c.   storing a subset of said contents in said second level cache responsive to said

    eviction (abstract, Figure 3, column 2, lines 25-58).

5.   Referring to claim 5, Yung has taught the method of claim 4, as described above, and

wherein said branch instruction is fetched from said second level cache (column 1, lines 10-17).

6.   Referring to claim 6, Yung has taught the method of claim 1, as described above, and

wherein said subset comprises a dynamic bit (Figure 3).

7.   Referring to claim 7, Yung has taught the method of claim 6, as described above, and

wherein said subset further comprises a branch marker bit (Figure 3).

8.   Referring to claim 8, Yung has taught the method of claim 7, as described above, and

wherein said branch prediction further comprises an end adjustment bit (Figure 3).

9.   Referring to claim 21, Yung has taught the method of claim 1, as described above, and

wherein said second level cache and said first level cache do not store duplicate information

(Figure 2 and Figure 3).

Response to Arguments

10.   Applicant's arguments with respect to claims 1, 2, 5-10, 13-18, and 21-23 have been

considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

11.   Claims 3, 4, 11, 12, 19, and 20 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

Conclusion

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tonia L. Meonske whose telephone number is (571) 272-4170.

The examiner can normally be reached on Monday-Friday, 8-4:30.

13.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Eddie P. Chan can be reached on (571) 272-4162. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

14.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tlm

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